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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/518,789	06/28/2005	Jens A. Hansen	G3781.0007/P007	9876
24998	7590	06/24/2009		
DICKSTEIN SHAPIRO LLP 1825 EYE STREET NW Washington, DC 20006-5403			EXAMINER OLADAPO, TAIWO	
			ART UNIT 1797	PAPER NUMBER
			MAIL DATE 06/24/2009	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/518,789	<b>Applicant(s)</b> HANSEN ET AL.	
	<b>Examiner</b> TAIWO OLADAPO	<b>Art Unit</b> 1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 09 March 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-8 and 11-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8, 11-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

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### **DETAILED ACTION**

1. The amendment/response dated 03/09/2009 have been considered and entered for the record. The amendment overcomes previous rejections which are hereby withdrawn. New rejections are made in view of amendment.

#### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later

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invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1 – 8, 11 – 13 rejected under 35 U.S.C. 103(a) as being unpatentable over Gentry et al. (US 6,261,441)

6. In regards to claim 1 – 3, 11, 13, Gentry teaches a process of preparing middle distillates by conversion of paraffin (column 1 lines 44 - 54). Gentry teach the process involves the steps of hydroisomerization which uses hydrogenation components supported by beta zeolite having a silica/alumina support having a ratio of silica: alumina of preferably at least 100:1 (column 11 lines 50 – 55; column 12 lines 1 – 24). Applicants inclusion of an amorphous support would correspond to the use of an alumina binder by Gentry (Col 13, lines 37-55).

The position is taken that the catalyst of Gentry including an amorphous support ( having ratios as in the claimed invention), will intrinsically also have the same Ion Exchange Capacity-Acidity Index and NH<sub>3</sub>-TPD Acidity Index of claims 1 – 3, 11. The process meets the limitations of claim 13 which requires contacting of a hydrocarbon feedstock in the presence of a hydrogen under conversion condition with a catalyst. Gentry teaches the process wherein the support can comprise zeolite: matrix of from 80:20 up to 20:80 by weight (column 13 lines 44 – 46). Therefore, the amount of zeolite in the matrix can be as low as 20 which overlaps the claimed range.

In the case where the claimed ranges “overlap or lie inside ranges disclosed by the prior art” a prima facie case of obviousness exists. In re Wertheim, 541 F.2d 257, 191 USPQ 90 (CCPA 1976); In re Woodruff, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990).

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7. In regards to claim 4, Gentry teaches the process wherein the beta zeolite has silica: alumina molar ratio of at least 100:1 as previously stated.
8. In regards to claims 5 – 7, Gentry teaches the process wherein the hydrogenation components include metals such as nickel and tungsten and their combinations (column 8 lines 37 – 42; column 11 lines 54 – 58).
9. In regards to claim 8, Gentry teaches the process wherein the support can comprise silica/alumina ratio of at least 50%, which provides zeolite of 50% or less (column 8 lines 16 – 23).
10. In regards to claim 12, Gentry teaches the process wherein hydrocracking occurs in a single step to selectively produce middle distillates (column 10 lines 64 – column 11 line 11).

#### ***Response to Arguments***

11. Applicant's arguments have been fully considered but they are not persuasive.
12. The applicant argues that Gentry does not anticipate claims 1-8, 11 because it teaches a two-step (hydrocracking and dewaxing) process for producing middle distillates. Although Gentry generally teaches the two-step process for producing middle distillates, Gentry also teaches that middle distillates can be produced in the hydrocracking step alone (column 10 lines 64 – column 11 line 11). However, claims 1-8, 11 are directed to preparing middle distillates and contain no limitation(s) in regards to steps or stages used in the process, contrary to the applicant's assertion. As discussed above, Gentry teaches the process of hydrocracking to selectively prepare middle distillates using a hydrocarbon conversion catalyst such as beta zeolite (column 8 lines 8 – 12).

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13. The applicant argues that Gentry does not teach the process of hydrocracking with zeolite catalyst. Contrarily, Gentry teaches hydrocracking using one catalyst selected from a group comprising zeolite beta as cited above (column 8 lines 8 – 12).

14. The applicant argues that Gentry teaches that middle distillates produced in the hydrocracking stage are unsuitable for use as jet fuel or diesel etc. On the contrary, Gentry teaches that middle distillates prepared in the hydrocracking stage under high pressure contain low aromatics, but distillates prepared with relatively low pressure contain high aromatic and are unsuitable for use as jet fuel etc (column 8 line 55 – column 9 line 4). Nevertheless, the invention as claimed are directed to the process of preparing middle distillates and not to their intended use(s).

15. The applicant argues that the claimed invention provides selectivity to middle distillate as high as 73.9%, but there is not motivation for one of ordinary skill in the art to prepare middle distillates by hydrocracking with zeolites beta, REX, REY or USY since Gentry teaches the process is not selective to middle distillates as they contain aromatics. On the contrary, Gentry teaches hydrocracking using zeolite beta, and teaches that middle distillates can be prepared with low aromatics when hydrocracking is performed at high pressures as discussed above.

16. The applicant argues that examiner refers to dewaxing which occurs in the second stage of Gentry's reference that teaches high selectivity for isoemerisation of waxy products but not high selectivity for the formation of middle distillates using zeolite beta having the IEC-acidity index of less than 3.7. However, as previously discussed and applicant affirms, Gentry teaches hydrocracking in the first stage using zeolite beta which as the IEC-acidity index recited.

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17. The applicant asserts that there is no indication in Gentry that beta zeolite possesses high selectivity for middle distillates. However, Gentry teaches zeolite beta is used in hydrocracking according to the claimed invention as previously discussed. Gentry teaches that the process can be operated in a distillate selective mode, which provides high selectivity for producing middle distillates (column 8 lines 55 – 57); thus providing a motivation for selectively producing middle distillates with zeolite beta which possess the claimed ion-exchange capacity.

18. The applicant asserts that Gentry teaches away from the claimed invention by teaching a second stage. However, the Gentry teaches middle distillates can be prepared in a single hydrocracking stage as previously discussed. Notwithstanding, the limitations of the previously rejected claims 1 – 8, 11 do not include number of stages in which the invention should be performed. Therefore, Gentry teaches the claimed limitations.

19. The applicant argues that Gentry discloses typical contents of the zeolite comprise ratios of 80:20 to 50:50 of zeolite: matrix. However, as stated above Gentry teaches the process wherein the support can comprise zeolite: matrix of from 80:20 up to 20:80 by weight (column 13 lines 44 – 46). Therefore, the amount of zeolite in the matrix can be as low as 20 which overlaps the claimed range.

### ***Conclusion***

20. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TAIWO OLADAPO whose telephone number is (571)270-3723. The examiner can normally be reached on 8:00 - 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (571)272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

TO

/Glenn A Caldarola/  
Acting SPE of Art Unit 1797